

Daily GLOWBUGS

Digest: V1 #34

via AB4EL Web Digests @ SunSITE

Purpose: building and operating vacuum tube-based QRP rigs

[AB4EL Ham Radio Homepage @ SunSITE](#)

%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%%

Subject: glowbugs V1 #34

glowbugs

Saturday, May 17 1997

Volume 01 : Number 034

Date: Fri, 16 May 1997 19:57:10 +0000

From: "Brian Carling (Radio G3XLQ / AF4K)" <bry@mnsinc.com>

Subject: Another Freebie "micro-mini-list"

I have a FREE little dynamotor if anyone would like the little gem.

It came out of some kind of Thyatron RDF unit made by
"Pacific Division" (Bendix?)

Anyway it is a model LD-1D
and runs on 24V DC at just 1.2 Amps!

Produces 350V DC at 40 mA (maybe a tad more too!)

Complete with nice shock-mounts. Looks clean!

Price is - \$0.00 plus shipping from Maryland 20877

Weights in at about 5-8 pounds I would guess.

Bry, AF4K

* Brian Carling in Gaithersburg, Maryland, USA *
* E-mail: bry@mnsinc.com *
* http://www.mnsinc.com/bry/ *

Date: Fri, 16 May 1997 19:57:12 +0000

From: "Brian Carling (Radio G3XLQ / AF4K)" <bry@mnsinc.com>

Subject: Re: Ferret Radio

Yes, and in fact there is still a company in CANADA that SELLS 19

sets!

There were a lot less of the 22 sets made however, but they were pretty similar.

Take a look at my web site for the address of the guy in Canada. He actually has a catalog and sells all of the accessories for the 19 set too!

It was a venerable 807 rig with about 10 watts of AM! Pretty rustic actually!

Not as good as the ARC-5 and about 4 times the size. A lot of British hams used them in the 1950s.

Bry

On 16 May 97 at 10:28, EWoodman@aol.com spoke about Ferret Radio and said:

> I have a friend who recently purchased a fully restored Ferret. This
> is a British military armored patrol vehicle built back in the 50's.
> The radio transceiver installed in it is designated as a C-42. This
> covers approx. 30 - 60 Mc and is FM (15Kc deviation). We were
> thinking about installing a different radio. I don't imagine a
> wide-band FM signal would be much appreciated on 6 meters. We have
> found that a Wireless Set No. 19 or 22 would also be historically
> correct as these were used in the early vehicles. Can anyone give me
> a description of these sets and whether they ever show up for sale?
>

> (He drives and I get to sit in the turret and play with the radio
> gear so it would be nice to have something usable as well as
> historically correct! That's what I call a REAL boatanchor!)

> Thanks and 73,

>

> Eric KA1YRV

>

* Brian Carling in Gaithersburg, Maryland, USA *
* E-mail: bry@mnsinc.com *
* http://www.mnsinc.com/bry/ *

Thought for the day:

I went to a fight the other day and an ice hockey.
game broke out!

Date: Fri, 16 May 1997 18:18:20 -0700

From: Dave <gekko95@ix.netcom.com>

Subject: Another freebie...

Hey! This freebie stuff is kinda fun! I dug through my junk box and came up with an interesting freebie. I don't have tons of stuff, but I DO have these!

I have 3 sets of the following to give away. I have fair number of them, but don't need as many as I have.

Qty. 3 6DK6 7-pin (looks like 6AU6-size)
Qty. 3 35EH5 7-pin (looks like a 6AQ5)

Ya get 6 tubes, all new. (NOS anyway)

I'll even cover the postage for all 3 sets.
One set of 6 tubes per person till all 3 sets
are gone.

Here's the catch: Ya have to come up with a
circuit that I CAN USE these darn things for!
(No offense, McAulay ;-/)! Like a little
2-tube regen, speed keyer, transmitter, booster
for a D-104, or something! My RCA book doesn't
list them (it's too old), but they're pretty generic.

Let's hear from the old design folks, eh?

If ya want 'em email me.

Dave WB7AWK
Tacoma, WA

Date: Fri, 16 May 1997 19:22:48 -0700 (PDT)
From: JMcAulay <jmc@QNET.COM>
Subject: Re: Another freebie...

At 06:18 PM 5/16/97 -0700, you wrote:

>
>
>Hey! This freebie stuff is kinda fun! I dug through
>my junk box and came up with an interesting freebie. I
>don't have tons of stuff, but I DO have these!
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>fair number of them, but don't need as many as I have.
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>Qty. 3 6DK6 7-pin (looks like 6AU6-size)
>Qty. 3 35EH5 7-pin (looks like a 6AQ5)
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>Ya get 6 tubes, all new. (NOS anyway)
>
>I'll even cover the postage for all 3 sets.
>One set of 6 tubes per person till all 3 sets
>are gone.
>
>Here's the catch: Ya have to come up with a
>circuit that I CAN USE these darn things for!
>(No offense, McAulay ;-/)! Like a little
>2-tube regen, speed keyer, transmitter, booster
>for a D-104, or something! My RCA book doesn't
>list them (it's too old), but they're pretty generic.
>
>Let's hear from the old design folks, eh?
>

>If ya want 'em email me.

>

>

>Dave WB7AWK

>Tacoma, WA

>

>

Hi, Dave:

Gee, WoW, Dave, that sounds just peachy! While I can hardly wait, I will.

Haven't you yet drawn the schematic I narrated to you the other day?

[Hey, a narrated schematic may not be a thing of beauty, but it'll work....]

By the way, they're neither pretty nor generic. They're ugly and Toshiba.

Hope this helps.

73

John WA6QPL@amsat.org

```
          \l/
         (o o)
-----ooO-(_)---Ooo-----
```

```
*****
*
* Old age and treachery will always triumph over youth and skill. *
*
*****
```

Date: Fri, 16 May 1997 21:26:38 -0600

From: Doug <doug@sunrise.alpinet.net>

Subject: Re: Western Electric 102A tube, whatzit?

Hi Bob, it's been a long time since I replaced one of those little "doorknob" tubes...I think about 20 years. But, I can tell ya they were a stable amp..used in line regulators and terminal amps for the WE L1 coax carrier system. We went thru them like crazy...I did the mtc for all the regs and amps on the line from Seattle to Yakima, Wa. It was put in service in late 1947, using bays from Cleveland OH and Chicago, Ill. The carrier was 600 voice channels and ran on buried, 4 tube coax. Each coax was 0.375 in. in diameter, glass bead spaced and had the tubes surrounded by paper insulated, 19 ga pairs used for voice, along with two 16 ga program pairs. These were used to bring the first TV audio to the "wilds of Eastern Washington". The video feed was placed on the spare tubes, back in the days of black and white networks and then fed to the local TV stations in that area.

The entire bundle of tubes and pairs was wrapped in jute and paper, covered with lead sheathing and then over that layer went two layers of 2 in. spring steel tape, with two layers of tar impregnated jute on the outside of that. When the cable was buried, it was put in to what we called "Government Standards" for the time...in other words it was backhoed, plowed and blasted down to 48 inch depth for the entire route.

The system consisted of a line repeater every 7.4 miles, placed in a concrete block building, and powered by an 1800 volt power loop on the center conductor of the coaxes that could run up to 10 repeaters. It

was spooky gear to work on with that kind of voltage ...one fault in the wrong place and everything was hot. Each tube had 4 pilot freqs on it, 64, 556, 2064 and 3096 khz, and these were monitored by the regulators, adjusting line gain with the amps in each mounting with the regs to keep overall levels constant. The 2064 was the overall line level pilot, and was what the 102A's were used to amplifiy.

It seems to me the 101A was a triode and the 102 a tetrode..

So...that's what the 102A was made for and how it was used in the phone racket.

Have fun

73

Doug, K7YD
Livinston, MT

BOB DUCKWORTH wrote:

>

> Looks like a little golf ball with legs.

> WE102A.

> Couldn't find in my RCA book or on web or usenet archives.

> -bob

Date: Sat, 17 May 1997 11:05:07 -0400 (EDT)

From: leeboo@ct.net (Leon Wiltsey)

Subject: HW 16?

Hi Gang

This may sound stupid, but I bought a hw16 transciever by Heathkit ands now can not find anything about it. (it wasa advertised as working ok) Reason I got it was had no luck at all (and it was to darn big and heavy) restoring the sx101 I got. It needed a complete alignment and I did not have the test equipmenty to do the job, so sold it for what I had in it. I know I can get a manual from Heath and I will not need a shack full of stuff to get it goiong if needed.

BUT JUST WHAT KIND OF A RECEIVER IS IT?seller did not seem to know,I know it is a novice band transciever, but little else about it. only paid 60 bucks so do not have

a big sum of money tied up

HELP WHAT HAVE I BOUGHT

TNX FOR ALL YOUR TROUBLE

68 yr old semidisabled senior

(stroke got my balance & hand to eye coordination)

old old old ham but I'm back agn

now KF4RCL TECK+ (MUCH HAPPINESS)

PLAY KEYBOARD AND SING?

no trash music (anything composed after 1965)

Leon B Wiltsey (Lee)
4600 Lake Haven BLVD.
Sebring, Fl. 33872

SEBRING FL. THAT WONDERFUL PLACE WHERE THERE IS NO QRM
FROM ANYTHING LOCAL

Date: Sat, 17 May 1997 09:26:49 -0700 (PDT)
From: JMcAulay <jmc@QNET.COM>
Subject: Re: HW 16?

At 11:05 AM 5/17/97 -0400, you wrote:

>Hi Gang
>This may sound stupid, but I bought a hwl6 transciever by Heathkit
>ands now can not find anything about it. (it wasa advertised as working ok)
>Reason I got it was had no luck at all (and it was to darn big
>and heavy) restoring the sx101 I got. It needed a complete alignment
>and I did not have the test equipmenty to do the job, so sold it for
>what I had in it. I know I can get a manual from Heath and I will not need
>a shack full of stuff to get it goiong if needed.
>BUT JUST WHAT KIND OF A RECEIVER IS IT?seller did not seem to know,I know it
>is a novice band transciever, but little else about it. only paid 60 bucks
>so do not have
>a big sum of money tied up HELP WHAT HAVE I BOUGHT
>TNX FOR ALL YOUR TROUBLE
>

Hi, Leon:

Well, for one thing, if it works, you have bought a genuine bargain. I have one of the things, and everyone who has ever used it (I used to lend it out to new novices) thought it was just fine (but then, what do they know? hehehe). The HW-16 receiver is a fairly sanitary superhet with a bandwidth that's really a bit too broad -- or maybe a LOT too broad -- to satisfy most CW ops. But it does work well when working, and it ought to be just fine for you at least for a while. Congratulations on the new gear!

73
John

Date: Sat, 17 May 1997 12:34:21 -0400
From: Steve Modena <ab4el@MindSpring.com>
Subject: Re: Where are message archives for new list?

Ben wrote this:

>Date: Fri, 16 May 1997 17:55:07 -0400
>From: Ben Bradley <bradley@norcross.mcs.slb.com>
>Subject: Where are message archives for new list?
>
>... I'd been reading the list from the old server from the archives [now]
at:
>
><http://sunsite.unc.edu/pub/academic/agriculture/agronomy/ham/GLOWBUGS/ThePorch/>
>
> Are achives of postings on the new server saved somewhere?...

What you are looking for is in:

<http://sunsite.unc.edu/pub/academic/agriculture/agronomy/ham/GLOWBUGS/ATL/>

Yes, I just put it there. :^) However, I already had another directory:

<http://sunsite.unc.edu/pub/academic/agriculture/agronomy/ham/GLOWBUGS/html/>

which contained these archive files in HTML markup format for reading by your web-browser. I have a link for this on my main webpage:

<http://sunsite.unc.edu/modena/hamradio.html>

If you have any questions or see any problems, please email me.

- --

73/Steve/AB4EL AB4EL@MindSpring.com modena@SunSITE.unc.edu

Date: Sat, 17 May 1997 12:51:33 +0000

From: "Lawrence R. Ware" <lrware@pipeline.com>

Subject: Re: Another freebie...

At 18:18 05/16/1997 -0700, Dave <gekko95@popd.ix.netcom.com> wrote:

>Hey! This freebie stuff is kinda fun!

Tis indeed! :-)

>Here's the catch: Ya have to come up with a

>circuit that I CAN USE these darn things for!

I really like this part! Mind if I steal it for my next giveaway?

- -Larry

Larry's Home for Wayward Test Equipment & Old Radios (tm)

Let your equipment retire in sunny central Florida.

Intensive Care, Private Bench Space, Frequent Use,

Factory trained HP, Tek & Fluke Surgeon on staff.

Good Home Guaranteed or double your junk back!

lrware@pipeline.com - Orlando, FL -

Date: Sat, 17 May 1997 14:14:33 -0400 (EDT)

From: rdkeys@csemail.cropsci.ncsu.edu

Subject: Re: 3579 & 7050 funzies

> > Both are deader than last year's fish here.

>

> Not so here!

Whew..... dunno if I wannbe near that fish.....

> I have worked a couple of guys on there...

> VA3RP, K2RMQ on 5/15/97

I have worked Rod/VA3RP several times, and last nite had the good fortune to work our illustrious listleader Conard/WS4S/8 from the motelroomwiththe

sneakysnakewireoutthewindowandupsomewhere and his AN/GRC-109. Armchair copy on 80M in NC. Worked Sandy/W5TVW on 40 at 0300 and on 80 at 0400Z. Solid QSA5 copy, and nil silisidebander or rittyrattybingbang around on 80M either. Keep yer tin cans on fer da crewe --- they be about if ye slips inta da tin a little.....in the old days, the marke of a CW chops was how far he could slip into his tin cans an git dwn in da QRMud ta dig out da weak ones.....

73/ZUT DE NA4G/Bob UP

p.s. Hint for the day..... If youse chops can muster up a JANuine LS-166 or equivalent tin diaphragm speaker, as used in govt. work by the green-clad boyz, set it down on its backside, and cuts ye a piece of black PVC pipe (or white or wooden tube or cardboard tube or bakelite tube, or whatever yegotsta getd a picture) roughly 1R5 to 2R0 inches in diameter or a little more or less, and roughly the length of a gentlemen's cigar (anywhere around 5-10 inches cut to resonate) making sure it resonates at the desired sidetone QRG, and then set it on small thin feet of some sort about 1/2 inch above the grill of the overturned speaker, in a vertical organ pipe resonance mode. It maketh one o' da finest CW filters ye ever did 'ear.

Similarly, for the regenerator crewe, wat uses tin cans, take a similar sized tube and insert a spare tin can sized ta fit (I use a Trimm Dependable or Featherlite tin can) in one end and set it on its vertical to filter in a similar manner to the LS-166, above.

Bothe worketh FB, in de ol' Man's shack.

The design hails from a little filter from the early 1920's that used used a tin can driver in a tube like this with a doctor's stethoscope in the open end to act as the sound pipe directly to the ears. Works fine, too. That and a good regenerator puts the socalled Kenicoyasawhooies ta shame. Ancient tech at its finest.

Date: Sat, 17 May 1997 11:35:51 -0700
From: Dave <gekko95@ix.netcom.com>
Subject: re: Another Freebie....

All da tubes is gone!

Thanks to all who replied! The toobs are all merrily on their way to happy glowbuggers. Hopefully a wellspring of 35EH5 circuits will be forthcoming! I will keep all posted on what ideas are generated.

Now to find the KW-1 I wanted to give away... (eh, McAulay?) ;-/

73's and have fun with the 35EH5's!

Date: Sat, 17 May 1997 11:42:33 -0700
From: Richard Wilkerson <richqrp@cts.com>

Subject: Re: 3579 & 7050 funzies

rdkeys@csemail.cropski.ncsu.edu wrote:

>
> > > Both are deader than last year's fish here.
> >
> > Not so here!
>
> Whew..... dunno if I wannbe near that fish.....
>
> > I have worked a couple of guys on there...
> > VA3RP, K2RMQ on 5/15/97

No one was home last night here in So. Cal. I called quite a few times last night on both freq. lots of noise for the past few nights also, is not helping my problem here. Hope to hear someone tonight!!
73's.....rich

- --

Rich Wilkerson, WD6FDD, Santee, Ca.
NorCal, ARCI, ScQRPions, E.C.R.A.

Date: Sat, 17 May 1997 11:41:28 -0700

From: Dave <gekko95@ix.netcom.com>

Subject: re: Another Freebie....

Please forgive me if this is a repeat! My ISP burped, and I got it back as 'bounced', but it may not be.

I said:

All da tubes is gone!

Thanks to all who replied! The toobs are all merrily on their way to happy glowbuggers. Hopefully a wellspring of 35EH5 circuits will be forthcoming! I will keep all posted on what ideas are generated.

Now to find the KW-1 I wanted to give away... (eh, McAulay?) ;-/

73's and have fun with the 35EH5's!

"35EH5's - Hope ya choke on 'em"

- Bitter designer of an
ill-fated tube design
just prior to the
transistor craze

"35EH5's - Hope ya choke on 'em"

- Bitter designer of an
ill-fated tube design
just prior to the
transistor craze

Date: Sat, 17 May 1997 12:59:36 -0700
From: Gerald Caouette <ve6nap@oanet.com>
Subject: Tube H..E..L..P..

I have some JAN 7645 Valves (Tubes)
9 pin mini
Military PN 5960-00-828-1217
Packaged in Westinghouse boxes

And some JAN 5719 Valves (tubes)
8 lead miniature tube
about 0.375 " diameter X 1.25" long with 1.5" leads
Military PN 5960-00-228-0636
Package says simalar to CV-4008

Does any one have the specs and pin out on these

regards
Gerald Caouette
de
ve6nap@oanet.com

Date: Sat, 17 May 1997 15:47:45 +0100
From: BOB DUCKWORTH <bob@atl.org>
Subject: Amazing little 5 tube BA RX uses 5 tubes and they are all the same!

Thought some of you guys might be interested in this little RX.
It's a lot of radio for 5 tubes.

Mosely CM-1.

It's a 5 tuber employing 5 x 6AW8 (pentode/triode in the same hollow).

It's basically a 4 tube 80m band RX with a one tube converter (triode mixer and pentode xtal osc) with preselector that can be switched in for the other bands. The triode mixer is touted as having lower noise than a pentode mixer and an advantage on 10m.

The second 6AW8 is triode tuneable osc and mixer being a TRF on 80 and TIF on 40 - 10. IF is 455kHz with two transformers for selectivity. VFO runs 3955 to 4555kHz.

The third 6AW8 pentode section acts as a 1st IF amp driving the 'S' meter and another transformer. It's triode section acts as the first audio amp.

The fourth 6AW8 pentode is a second IF driving another transformer. These 4 x 455kHz IF transformers provide good selectivity and the RX is enjoyable to use on SSB and CW although I'll probably add an outboard 'Q' multiplier (hint, if you've got one in the junk box). It's triode section is used as a product detector.

The final 6AW8 pentode is the second audio amp. It's triode is the BFO. AM detection is handled by a 1N34 with a pair of 1N54A employed as a basic ANL.

Built in Bridgeton MO.

- -bob
wb4mnf

Date: Sat, 17 May 1997 15:30:38 -0700 (PDT)
From: Ken Gordon <keng@uidaho.edu>
Subject: Re: HW 16?

> >
> Hi, Leon:
> Well, for one thing, if it works, you have bought a genuine bargain. I

Agreed. It is a neat little rig. I just bought one recently since some of my children now want to be hams. (About time!!!)

> hehehe). The HW-16 receiver is a fairly sanitary superhet with a bandwidth
> that's really a bit too broad -- or maybe a LOT too broad -- to satisfy most
> CW ops.

Too broad?!?!? Well, I guess if you are used to a Collins mech filter at 200 Hz, 500 hZ (the HW-16) might appear to be too broad. Personally, I think it just fine...then again, I prefer the 2.1 kHz filter for CW anyway so I can keep track of what is going on nearby. :-)

Ken W7EKB

Date: Sat, 17 May 1997 15:43:03 -0700 (PDT)
From: Ken Gordon <keng@uidaho.edu>
Subject: Re: 3579 & 7050 funzies

Well, maybe there is a big hole in the ionosphere over north western Idaho. Maybe two signals on both 80 and/or 40, nothing on 20. At 0530 AM PDT I heard someone on 7050. I was up in bed at the time. I had left the R-1004 on in the basement last night. Whoever it was, was S-9.

I checked the end-fed lw to see if it had gotten cut off or grounded, or buried, and as far as I can see it is still up. All three receivers seem to work (HW-16, R-1004, SB-301). What signals I do hear are pretty weak.

It even sound dead on the tri-bander. Of course it never did work very well anyway, but this is ridiculous!!!!

Sigh.....

Ken W7EKB

BTW, was listening a few minutes ago to a Swap Net on 7240 kHz SSB on the R-1004. W6xxx. Lots of QSB on him and he was weak, but at least I could hear him. I still find the R-1004 to be a bit more sensitive than the SB-301. Shucks..... Someone on this Swap Net had a Millen Grid Dip meter with all coils for sale for \$80.00.

Date: Sat, 17 May 1997 19:04:35 +0000
From: "Brian Carling (Radio G3XLQ / AF4K)" <bry@mnsinc.com>
Subject: Re: 3579 & 7050 funzies

Can you tell us about that swap net, Ken?

What time and what DAYS of the week is it on?

Thanks - Bry & da crewe!

On 17 May 97 at 15:43, Ken Gordon spoke about Re: 3579 & 7050 funzies and said:

> Well, may be there is a big hole in the ionosphere over north
> western Idaho. Maybe two signals on both 80 and/or 40, nothing on
> 20. At 0530 AM PDT I heard someone on 7050. I was up in bed at the
> time. I had left the R-1004 on in the basement last night. Whoever
> it was, was S-9.

>

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> grounded, or buried, and as far as I can see it is still up. All
> three receivers seem to work (HW-16, R-1004, SB-301). What signals
> I do hear are pretty weak.

>

> It even sound dead on the tri-bander. Of course it never did work
> very well anyway, but this is ridiculous!!!!

>

> Sigh.....

>

> Ken W7EKB

>

> BTW, was listening a few minutes ago to a Swap Net on 7240 kHz SSB
> on the R-1004. W6xxx. Lots of QSB on him and he was weak, but at
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> sensitive than the SB-301. Shucks..... Someone on this Swap Net
> had a Millen Grid Dip meter with all coils for sale for \$80.00.

>

>

*** 73 from Radio AF4K / G3XLQ in Gaithersburg, MD USA *
** E-mail to: bry@mnsinc.com *
*** See the great ham radio resources at: *
** <http://www.mnsinc.com/bry/> *

Date: Sat, 17 May 1997 19:28:58 -0400 (EDT)
From: leeboo@ct.net (Leon Wiltsey)
Subject: NEED PART

>To: BA
>From: leeboo@ct.net (Leon Wiltsey)
>Subject: NEED PART
>Cc:
>Bcc:
>X-Attachments:
>
>Hi Gang
>
>Here I sit in this little one horse town, needing a
>rec type variable cap. Size not critical as I am
>building coil to match. The only one I had I used
>in my regen, and yesterday the plates started coming
> loose. Looked all over town for an old rec to yank one
> out of no luck. So here I am rec is nw.and I need a part.
> I probably will get many offers and intend to take you
> up on all of them. Something like a 140mmfd or even
> as high as 365 from a old broadcast tuner will due.
>tnx agn for all your help. 73 73 73
>

68 yr old semidisabled senior
(stroke got my balance & hand to eye coordination)
old old old ham but I'm back agn
now KF4RCL TECK+ (MUCH HAPPINESS)
PLAY KEYBOARD AND SING?
BUILD MOST OF MY STATION EQUIP
(tubes that is no SOLID STATE)

no trash music (anything composed after 1965)

Leon B Wiltsey (Lee)
4600 Lake Haven BLVD.
Sebring, Fl. 33872

SEBRING FL. THAT WONDERFUL PLACE WHERE THERE IS NO QRM
FROM ANYTHING LOCAL

Date: Sat, 17 May 1997 20:04:11 -0500
From: wier@bobcat.etsu.edu (bob wier)
Subject: Re: HW 16?

Too broad?!?!? Well, I guess if you are used to a Collins mech filter at 200 Hz, 500 hZ (the HW-16) might appear to be too broad. Personally, I think it just fine...then again, I prefer the 2.1 kHz filter for CW anyway

One of the kind of neat things I did with my HW-16 was to occasionally tune the receiver section up so that it covered the low part of the SSB portion of the band. The filter was just broad enough that if I tuned really carefully and went into "Donald Duck" listening mode :-) I could listen to the guys talking!

73s de WB5KXH

Bob Wier
mailto:wier@bobcat.tamu-commerce.edu
08:03 PM Saturday, May 17, 1997
Texas A & M University - Commerce
keeper of the Photo-3d, Overland-Trails
ICOM radio and LDS State Research Outline Guides
"We're not making the same old mistakes..."
"You're right - we're making brand new ones."
--Jurassic Park - The Lost World

End of glowbugs V1 #34

%%%% GlowBugs %%%% GlowBugs %%%% GlowBugs %%%% GlowBugs %%%%

[AB4EL Ham Radio Homepage @ SunSITE](#)

Created by **Steve Modena, AB4EL**
Comments and suggestions to **modena@SunSITE.unc.edu**
